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PAPER

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte WENTING TANG, LUDMILA CHERKASOVA, and LANCE
WARREN RUSSELL

Appeal 2008-005171
Application 09/880,632
Technology Center 2100

Decided: August 20, 2009

Before JAMES D. THOMAS, LEE E. BARRETT, and THU A. DANG,
Administrative Patent Judges.

DANG, *Administrative Patent Judge.*

DECISION ON APPEAL

I. STATEMENT OF THE CASE

Appellants appeal from the Examiner's final rejection of claims 1-29 under 35 U.S.C. § 134(a) (2002). We have jurisdiction under 35 U.S.C. § 6(b).

We reverse.

A. INVENTION

According to Appellants, the invention relates to the field of STREAMS-based Transmission Control Protocol/Internet protocols (TCP/IP) protocols (Spec. 1, ll. 8-10). Specifically, the invention relates to the field of modular implementation of a TCP handoff protocol in order to facilitate the transfer or migration of TCP states from one node to another node in a communication network (*Id.* at 10-14).

B. ILLUSTRATIVE CLAIM

Claim 1 is exemplary and is reproduced below:

1. In a communication network, a method of TCP state migration comprising the steps of:
 - a) establishing a communication session between a client and a front-end node at a first bottom TCP (BTCP) module located below a first TCP module in a first operating system at said front-end node, said front-end node accessing a plurality of back-end web servers forming a web server cluster that contains content;
 - b) receiving a HPTP request from said client at said first BTCP module;
 - c) parsing said HTTP request to determine which back-end web server, a selected back-end web server, in said

plurality of back-end web servers can process said HTTP request, said selected back-end web server not said front-end node;

d) extending said communication session to said selected back-end web server by handling-off an initial TCP state of said first BTCP module to said selected back-end web server;

e) sending said HTTP request to said selected back-end web server;

f) switching a bottom IP (BIP) module at said front-end node to a forwarding mode, wherein packets received at said BIP module from said client are forwarded to said selected back-end web server, said BIP module located below an IP module at said front-end node; and

g) terminating said communication session at said front-end node after said HTTP request is fully processed.

C. REJECTIONS

The prior art relied upon by the Examiner in rejecting the claims on appeal is:

| | | |
|---------|-----------------|---------------|
| Brendel | US 5,774,660 | Jun. 30, 1998 |
| Albert | US 6,775,692 B1 | Aug. 10, 2004 |

Claims 1-29 stand rejected under 35 U.S.C. § 103(a) over the teachings of Albert in view of Brendel.

II. ISSUE

Have Appellants shown that the Examiner erred in holding that Albert in view of Brendel teaches or would have suggested “establishing a communication session between a client and a front-end node at a first

bottom TCP (BTCP) module located below a first TCP module in a first operating system at said front-end node” (claim 1)? In particular, the issue turns on whether Brendel teaches or would have suggested a BTCP module located below a TCP module in an operating system.

III. FINDINGS OF FACT

The following Findings of Fact (FF) are shown by a preponderance of the evidence.

Brendel

1. Brendel discloses a modified TCP/IP stack which contains the standard TCP and IP modules (col. 13, ll. 40-46; Fig. 12).
2. Incoming packets from the Internet have their protocol changed from TCP to a proprietary “IXP” protocol, which is sent directly up to the application layer containing the load balancer because this IXP protocol is unknown to the standard TCP and IP layers (*Id.*).
3. Changing the protocol from TCP to the unrecognized IXP protocol forces the incoming packets to be sent directly to the load balancer, while the ordinary TCP packets with the known TCP protocol are sent to the TCP layer (col. 15, ll. 49-56; Fig. 15).

IV. PRINCIPLES OF LAW

35 U.S.C. § 103

In rejecting claims under 35 U.S.C. § 103, it is incumbent upon the Examiner to establish a factual basis to support the legal conclusion of obviousness. *See In re Fine*, 837 F.2d 1071, 1073 (Fed. Cir. 1988). In so doing, the Examiner must make the factual determinations set forth in

Graham v. John Deere Co., 383 U.S. 1, 17 (1966). “[T]he examiner bears the initial burden, on review of the prior art or on any other ground, of presenting a *prima facie* case of unpatentability.” *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992). “On appeal to the Board, an applicant can overcome a rejection [under § 103] by showing insufficient evidence of *prima facie* obviousness or by rebutting the *prima facie* case with evidence of secondary indicia of nonobviousness.” *In re Kahn*, 441 F.3d 977, 985-86 (Fed. Cir. 2006) (quoting *In re Rouffet*, 149 F.3d 1350, 1355 (Fed. Cir. 1998)).

V. ANALYSIS

Appellants contend that “*Brendel* fails to provide modules within an operation system” of claim 1 (App. Br. 15), and particularly, “[n]o such BTCP module is implemented in the operating system of *Brendel*” (*id.*). Appellants further contend that “*Brendel* appears to disclose a system in which the TCP/IP stack of an operating system is modified so as to change incoming packets from the TCP protocol to a proprietary protocol that is understood only at the application layer, rather than implementing modules, such as a BTCP module within the operating system” (App. Br. 16).

In response, the Examiner finds that *Brendel* “teaches modified IP input and output modules” wherein “either of which can be ‘below’ the other” (Ans. 9). The Examiner further finds that *Brendel* “teaches using an IXP protocol which is above the IP input and output modules, as incoming and outgoing packets have their protocol changed from TCP to IXP, with the IXP packets being passed back *up* to the modified IP input module” (*Id.*).

Accordingly, an issue we address on appeal is whether Albert in view of Brendel teaches or would have suggested “establishing a communication session between a client and a front-end node at a first bottom TCP (BTCP) module located below a first TCP module in a first operating system at said front-end node” (claim 1). In particular, we address whether Brendel teaches or would have suggested a BTCP module located below a TCP module in an operating system.

After reviewing the record on appeal, we agree with Appellants. In particular, Brendel discloses the standard TCP and IP modules (FF 1). In Brendel, packets with the unrecognized IXP protocol are sent directly to the load balancer, while the ordinary TCP packets with the known TCP protocol are sent to the TCP layer (FF 2-3).

Although the Examiner finds that either of Brendel’s modified IP input and output modules “can be ‘below’ the other” (Ans. 9) and that the “IXP protocol . . . is above the IP input and output modules . . . with the IXP packets being passed back *up* to the modified IP input module” (*Id.*), we cannot find any teaching of a BTCP module located below the TCP module in an operating system, as required by claim 1, in the sections referenced by the Examiner. In fact, the TCP module of Brendel is the “standard” module (FF 1), and there is no teaching in the sections pointed out by the Examiner of any module located below the TCP module in the operating system. Instead of a bottom TCP that receives the IXP protocol, as the Examiner finds, the section in Brendel referenced by the Examiner teaches that the IXP protocol is sent to the load balancer instead of the TCP layer (FF 2-3).

Contrary to the teachings of Brendel, alone or in combination with Albert, claim 1 requires “establishing a communication session between a

client and a front-end node at a first bottom TCP (BTCP) module located below a first TCP module in a first operating system at said front-end node.” As such, we will reverse the rejection of representative claim 1, independent claims 11 and 22 standing therewith, and claims 2-9, 12-21, and 23-29 depending respectively from claims 1, 11 and 22, over Albert in view of Brendel.

VII. CONCLUSION

Appellants have shown that the Examiner erred in holding claims 1-29 unpatentable over the teachings of Albert in view of Brendel under 35 U.S.C. § 103(a).

VIII. DECISION

We have not sustained the Examiner's rejection with respect to any claim on appeal. Therefore, the Examiner's decision rejecting claims 1-29 is reversed.

REVERSED

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